

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) ~~Prefabricated~~ A prefabricated sealing membrane, having high stability to UV exposure and formed of a support or reinforcement, the support or reinforcement being one of coated on at least one surface and impregnated throughout, with a modified bitumen base composition, characterized in that the thermoplastic bituminous coating and or impregnation composition is a bituminous binder modified by a thermoplastic polyurethane having the following weight proportion:

- 40 to 90% bitumen,
- 10 to 50% thermoplastic polyurethane,
- 0 to 10% aromatic oil,
- 0 to 50% filler,
- 0 to 0.5% catalyst,

the modified bituminous binder adapted to be softened by reheating and recover its properties after subsequent cooling, the sealing membrane highly stable to UV exposure, wherein

the thermoplastic polyurethane is obtained from a diisocyanate of a functionality substantially equal to 2, a polyol of functionality substantially equal to 2, and a chain elongation agent,

the polyurethane molecules are free of double carbon-carbon bonds, and

the polyols are free of ethylene linkages.

2. (currently amended) ~~Sealing~~ The membrane according to claim 1, characterized in that the bituminous composition has the following weight proportion:

- 60 to 80% bitumen,
- 15 to 40% thermoplastic polyurethane,
- 0 to 5% aromatic oil,
- 0 to 40% filler,
- 0 to 0.5% catalyst.

3. (currently amended) ~~Sealing~~ The membrane according to claim 1, characterized in that the bituminous composition contains also between 0.01 and 20% by weight of one or several additives improving adhesion, resistance to fire or to flames and/or resistance to roots, of said composition.

4. (canceled)

5. (currently amended) ~~Sealing~~ The membrane according to claim 1, characterized in that the thermoplastic polyurethane is constituted by a quantity of hard segments comprised between 10 and 40%.

6. (currently amended) ~~Sealing~~ The membrane according to claim 1, characterized in that the material or materials forming the filler is or are selected from the group of mineral fillers formed by chalk, silica, talc, dolomite, kaolin and mixtures of two or several of these substances.

7. (withdrawn) Process for the production of a sealing membrane, characterized in that it consists in synthesizing a prepolymer of thermoplastic polyurethane, introducing said prepolymer into the bitumen heated to a temperature higher than its melting temperature, then adding at least the chain elongating agent, then the catalyst and finally the other components, heating and agitating the resulting mixture, preferably intermittently, to achieve complete polymerization, to obtain a composition having a weight formulation according to claim 1, and, finally, applying the hot modified bituminous composition in a layer on the support such as a fibrous backing, by one or more operations of coating or impregnation.

8. (withdrawn) Process for the production of a sealing membrane, characterized in that it consists in bringing the bitumen to its melting temperature, preferably to 100°C, then adding the polyol or the polyols and the isocyanate adapted to form the thermoplastic polyurethane, agitating the intermediate resulting mixture to obtain about the theoretical quantity of

NCO, then adding the chain elongating agent, the catalyst and if desired the other components, progressively increasing the temperature of the final mixture to about 180°C, agitating the mixture intermittently or continuously, until complete polymerization, to obtain a composition having a weight proportion according to claim 1, finally, applying the hot modified bituminous composition in a layer on a support such as a fibrous backing, by one or more operations of coating or impregnation.

9-12. (canceled)

13. (previously presented) The membrane of claim 1, wherein,

the support or reinforcement comprises plural fibrous backings impregnated throughout.

14. (previously presented) The membrane of claim 1, wherein,

the support or reinforcement comprises a coated fibrous backing.

15. (currently amended) A prefabricated sealing membrane having high stability to UV exposure, comprising:

a support in the form of a fibrous backing; and

a modified bitumen base composition applied to a surface of the support or impregnated throughout the support,

the modified bitumen base composition comprising

40 to 90% bitumen,

10 to 50% thermoplastic polyurethane,

0 to 10% aromatic oil,

0 to 50% filler, and

0 to 0.5% catalyst,

the modified bituminous base composition being thermoplastic softening under action of heat from torch welding and recovering its properties after subsequent cooling, and

the sealing membrane highly stable to UV exposure, wherein

the thermoplastic polyurethane comprises a diisocyanate, a polyol, and a chain lengthening agent,

the thermoplastic polyurethane molecules free of double carbon-carbon bonds,

the polyols are free of ethylene linkages,

the functionality of the polyols is between 1.95 and 2.05, and

the functionality of the isocyanates is between 2.0 and 2.1.

16. (canceled)

17. (currently amended) The membrane of claim [[16]]
15, wherein a ratio of isocyanate/polyol is between 1.0 and 1.1.

18. (currently amended) The membrane of claim [[16]]
15, wherein a ratio of isocyanate/polyol is about 1.05.

19. (previously presented) The membrane of claim 15,
wherein the modified bitumen base composition comprises 20 to 30%
thermoplastic polyurethane.

20. (previously presented) The membrane of claim 15,
wherein the modified bitumen base composition comprises 15 to 40%
thermoplastic polyurethane.

21. (currently amended) The membrane of claim 1,
wherein,

~~the thermoplastic polyurethane comprises a~~
~~diisocyanate, a polyol, and a chain lengthening agent,~~

~~the thermoplastic polyurethane molecules free of double~~
~~carbon-carbon bonds,~~

~~the polyols are free of ethylene linkages,~~

the functionality of the polyols is between 1.95 and
2.05, and

the functionality of the isocyanates is between 2.0 and
2.1.

22. (previously presented) The membrane of claim 21, wherein a ratio of isocyanate/polyol is between 1.0 and 1.1.

23. (previously presented) The membrane of claim 1, wherein a ratio of isocyanate/polyol is about 1.05.

24. (previously presented) A prefabricated sealing membrane having high stability to UV exposure, comprising:

a support; and

a modified bitumen base composition applied to the support,

the modified bitumen base composition comprising

40 to 90% bitumen,

10 to 50% thermoplastic polyurethane comprising a diisocyanate, a polyol, and a chain lengthening agent,

0 to 10% aromatic oil,

0 to 50% filler, and

0 to 0.5% catalyst,

the modified bituminous base composition being thermoplastic softening under action of heat and recovering its properties after subsequent cooling,

the sealing membrane highly stable to UV exposure, wherein,

the thermoplastic polyurethane molecules are free of double carbon-carbon bonds,

the polyols are free of ethylene linkages, and
the functionality of the polyols is between 1.95 and
2.05.